Massachusetts Urban Forestry Program

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Tree Inventories Require Planning, Commitment

Assessments Are the First Step in the Long Process of Urban Forest Management

From the November 2007 issue of *The Forestry Source*, a publication of the Society of American Foresters, Author Joseph M. Smith

As suggested by the number of communities across the country that are planning to, are in the process of, or have conducted inventories of their urban forests, tree inventories are definitely in vogue. However, as researchers point out, communities should consider their tree inventories as one component of a long-term urban forest management plan and not an end in themselves. "There are all kinds of reasons to do a tree inventory," said Robert M. Ricard, urban and community forestry extension educator at the University of Connecticut. "There are also reasons not to bother, but an inventory is one step to creating a comprehensive management plan, just like in traditional forestry." And just as management plans in traditional forestry require landowners to determine their objectives, so must cities that want to conduct a tree inventory.

For the city of College Park, Maryland, which conducted a partial inventory of its street trees in public "rights-of-way" on September 29, the need to take a closer look at its trees was clear. "After discussions with city staff about the management issues associated with tree pests and construction damage, it became obvious that we needed to know more about the condition of the city's urban forest," said John Lea-Cox, associate professor in the Plant Sciences Department at the University of Maryland and chair of the city's Tree and Landscape Board. "We know something about the diversity, or lack thereof, of our urban forest, but we don't know a lot about its health, and some city officials have suggested that it may not be terribly good." The city also wanted a hazard assessment, he said, because, obviously, hazard trees have major implications in regard to both management and public safety. Brenda Alexander, deputy director of College Park's Department of Public Works, agreed and said that having better information about the health of the trees on city property will improve the department's ability to budget for tree maintenance and replacement. "I have been interested in conducting a citywide rights-of-way tree inventory to identify tree species and determine the overall quality of the tree population for many years," she said. "Data from the tree inventory will be used to determine where trees are growing and, conversely, where they are not growing, so

that new trees might be planted. The data pertaining to tree quality will be used to help plan for and budget funds for future maintenance work."

To perform its survey, College Park focused on seven areas of the city that, according to Lea-Cox, were chosen in consultation with the Department of Public Works and "located in neighborhoods of different ages, of different use, and that feature fairly diverse canopies." Then a three-person team consisting of a "team leader"— a graduate student enrolled in either the urban forestry or urban planning program at the University of Maryland—and two additional members are assigned to each area to "geolocate" each tree on a GIS database and collect data pertaining to the species, diameter-at-breast-height, overall height, and crown radius. The teams also performed an overall health and hazard assessment for each tree. Given their experience working with street trees, the graduate students played a central role in the inventory, Lea-Cox said. "Because we wanted people with tree identification skills involved, we enlisted graduate students from the university and the city agreed to pay them, which helped," he said. "The students enrolled in these programs were eager to participate as the inventory provided them with an opportunity to apply what they're learning in class." To ensure that the inventory itself went as smoothly as possible, Lea-Cox held a hands-on training session a week before the date of the actual inventory so that, when the date of the inventory arrived, everyone knew what he or she was supposed to do. "The training was an absolutely vital exercise because, up until that point, I don't think any of us had really thought through the whole process," said Lea-Cox. "Logistically, we got most of everything in place—the city maps, the county GIS data, information and materials from city staff, the volunteers— however, it wasn't until we got all the teams and equipment together, talked it through, and conducted a mini-assessment that everyone got an idea of what they were doing."

Because some of the information collected during the inventory required volunteers to use their best judgment, such as the health and hazard assessments, the training also offered an opportunity to give the volunteers some practice in assessing tree health and potential hazards, said Lea-Cox "Subjectivity can be a problem when you have people assessing trees in different areas," he said. "However, if there are any questionable ratings, then city staff will go back and reassess those trees. I am hopeful that the data will be good enough to give us a basic assessment, but the city wouldn't rely on it to remove a tree, for example. Before any such decisions would be made, we'd have the tree evaluated by an urban forester." Having professionals review the work of volunteers is a good idea, said the University of Connecticut's Ricard. "There is some research that suggests that if volunteers are well trained, they can do just as good a job as arborists in tree "inventories," he said. "With volunteers, however, the problem becomes, 'How does a city or the town conducting a tree inventory know that it's getting reliable information from volunteers?' Issues of liability become paramount, so it's recommend that a professional check their work."

Beyond the potential perils of conducting tree inventories with volunteers, a more important concern, said Ricard, is sustaining the interest and funding required to manage the urban forest after the inventory has been completed. "Tree inventories are something tangible and towns and cities can say 'we need one of those,' and come up with a great deal of justification for it," he said. "The problem becomes the maintenance. It's not so hard to get funding for an inventory. It's much harder to get funding for long-term

maintenance programs. There's no reason to do an inventory if no thought is put into long-term maintenance. It's just like tree planting—if no thought is put into the early or the long-term needs of that tree, then why plant it?"

Some cities, such as Amherst, Massachusetts, are developing unique ways to keep the information contained in their tree inventories up to date, thereby extending their utility. "Amherst has an incredible GIS database system that all of the town's departments have access to," said Alan Snow tree warden for the town of Amherst, Massachusetts. "Information from our public shade tree inventory will be entered into a new tree layer and shared among all the departments. It is my hope that integrating the inventory into the permitting and work request system used by the other departments offices will improve the flow of information and place public shade trees on par with other municipal services." In addition to an extensive database, Snow also is aided by a legislative and regulatory framework that not only gives him the authority to approve or deny requests to remove public shade trees, but also keeps him aware of any changes to the city's shade trees—information he will be able to use to update the city's shade tree inventory.

In College Park, the GIS information from its inventory will be incorporated into the city's GIS maps; however, city officials have yet to identify procedures for keeping inventory information up to date. "Keeping this information current was one of my concerns from the beginning and management of the inventory data is an issue that still needs to be addressed," said Alexander. "The inventory is a snapshot of the day it was done and we've already planted more than 20 trees since it was completed. I also have contract work scheduled for next week. If the contractor does work in any locations in which the inventory was done, then the information in the inventory will already be outdated. This is something on which our department will need to focus."

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Picks and Shovels

For more related information

www.safnet.org Since 1900, the Society of American Foresters has provided access to information and networking opportunities to prepare members for the challenges and the changes that face natural resource professionals.

www.na.fs.fed.us/spfo/pubs/uf/streettree/toc.htm A Guide to Street Tree Inventory Software," published by the USFS

www.itreetools.org USFS tools for inventorying and assessing the community forest.

www.hort.cornell.edu/commfor/inventory/index.html Cornell University, Community Forestry Program web site offers excellent insight into planning and conducting street tree inventories.

www.canr.uconn.edu/ces/forest/urbnshts.htm University of Connecticut, Cooperative Extension, Urban and Community Forestry web page fact sheet for determining tree inventory goals and assessment methods.

Growing Greener

Charles River Watershed Association (CRWA), Allston Brighton Community Development Corporation (ABCDC) and the City of Boston Parks & Recreation Department are developing a Green Streets demonstration project along a section of Everett Street in Allston and Brighton. The project aims to design and implement a system of green infrastructure that will maximize the use of street tree cover for storm water interception as well as temperature mitigation and air quality improvement. This project illustrates the connection between green infrastructure, stormwater management and ultimately water quality. The three partners in this effort, CRWA, ABCDC and the City of Boston each bring their own interests to the project, reflecting the nexus of the many and varied benefits of urban forestry including community building, water quality improvement and urban canopy enhancement. Further, by re-developing an area that is currently 100% paved surfaces with innovative tree planters, the project offers options for bringing trees and vegetation in to these highly degraded urban areas.

Growing on Trees

The 2007 Report from UMass Extension's Agriculture and Landscape Program In brief statements and statistics, the report highlights a breadth of initiatives for agricultural and landscape industries focused on business and economic development, food production, and environmental protection. To request an electronic version of the report go to http://www.umassoutreach.net/forms/aglandreport/.

New England Chapter of the International Society of Arboriculture 2008 Arbor Day Scholarship A fund was created to support local towns and cities conduct an Arbor Day Event. The Arbor Day Event should be designed to increase the awareness of the general public about the profession of arboriculture and of the importance of planting and maintaining healthy trees residing within our communities. In 2008, up to two awards of $250.00 will be awarded. Deadline for receipt of applications is February 22, 2008. Applicant must be a current member of the New England Chapter of the ISA. For a complete application and more information, please go to: http://www.newenglandisa.org/2008_ArborDayGrantApplication.pdf

Re:Vision, a series of international design competitions, launching in January 2007, explores the "WHAT IFs" and provides the opportunity to participate in a revolutionary process of transforming a run-down city block into a thriving mixed-use area that centers on the family and supports local sustainable businesses. The four phases of the competitions are; Re:Volt, Re:Route, Re:Store, and Re:Connect with the entire competition spanning over a 12 month period. To find out more about this competition visit http://www.urbanrevision.com/

On The Horizon

Northeastern Urban Research Organizational Network (NEURON)
Second annual meeting will be held this January 8- 9 at Boston College. Representatives from NGOs, universities, schools, local, state or federal-level agencies and municipalities interested in urban forest are encouraged to participate. This year's theme is Urban Long Term Research Areas (ULTRAs): Developing Platforms and a Network for Discovery. For more information contact Jess Schmierer, the Environmental Studies Coordinator at Boston College, 617-552-2477 or neuron@bc.edu

The 95th Annual Conference of the Massachusetts Tree Warden's & Foresters Association Hosted at the Host Hotel in Sturbridge, MA. January 8-9, 2008. For more information visit http://www.masstreewardens.org/Conference.html

Environmentally Sound Practices and Products for Managing Trees and Shrubs. This workshop series offered by UMass Extension is designed to educate landscape professionals on the fundamentals of managing trees and shrubs in the landscape. The first of ten workshops is Winter Botany on December 13, 2007 followed by Tree and Shrub Insect ID Lab on January 9th and Tree and Shrub Disease ID Lab January 16th. For complete list of workshops and registration information visit www.umassgreeninfo.org or contact UMass Extension at 413-545-0895

The 4th Hemlock Woolly Adelgid Symposium at the Hartford Hilton, Hartford, CT February 12-14, 2008. Hear about the latest research on biological and chemical controls for HWA as well as best management practices for the conservation of Hemlock and the historical and future impacts of exotic insects. For registration information visit the USFS North East Area web page http://na.fs.fed.us/fhp/hwa or contact Katherine McManus at kmcmanus@fs.fed.us or 203-230-4330

2008 National Conference on Urban Ecosystems Nature and the Network: Building a new framework for people and nature to work together May 28 - 30, 2008
Caribe Royal Hotel Orlando, Florida. Organized by *American Forests* the conference will bring together members of the business, government and conservation communities, to solidify and expand partnerships, assess our progress and plan strategies for building communities of the future. www.americanforests.org/conference

Species Spotlight

Aesculus flava (octandra)
Yellow Buckeye

Hardiness Zone 3

Edible Tree Fruit: Poisonous to Humans

General Description: Native to the mid-Atlantic region of the United States and throughout central Appalachia and from the Ohio River Valley to northern Georgia. This large deciduous tree typically grows between 60' and 80' tall, but has been known to grow over 100' tall. Crown shape is upright-oval to spreading with a medium to coarse texture. Leaves are opposite, palmately compound, with 5 leaflets, each being 4" to 6" long and elliptical. Summer foliage is a dark green turning glabrous when mature, the fall foliage turns a nice yellow or pale orange. In May, yellow panicle flowers 6” long and 2”-3” wide bloom. Each fruit is a smooth and tan pear-shaped capsule 2" - 2.5" in size containing 2 seeds. Bark is a smooth and interesting gray to brown on young trees, older trunks exhibit bark with large flat scales and plates.

Culture: Prefers a deep, moist, well-drained soil and full sun for best development. Avoid excessively hot, dry locations which can induce leaf scorch problems. Transplant B&B or from container only; has a fleshy, sparsely-branched root system.

Landscape Use: Needs ample space to develop, good selection for large lawn areas such as parks, campuses and estates. Excellent choice for providing shade, color and texture in the landscape and is less troubled by foliar diseases and problems than other buckeyes.

Liabilities: Somewhat uncommon and may be difficult to locate in the trade. Grass can be difficult to grow beneath due to dense shade and fruit litter can be a nuisance. Numerous insects and diseases can be a problem, but *A. flava* is the least bothered of all the species.

Cultivars/Varieties: None

For more information, see www.hort.uconn.edu/plants/j/jugnig/jugnig1.html

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